REMARKS

This is in response to the Office Action in the above noted application dated May 21, 2002. Claims 1 – 7 are in the application. Claims 1 – 7 stand rejected under the 35 U.S.C. §112, second paragraph as being indefinite. By this amendment, claims 1 and 2 are rewritten to overcome the rejection under 35 U.S.C. §112.

Claim 3 – 5 have been found to contain patentable subject matter. Those claims have been rewritten to overcome any rejection under 35 U.S.C. §112.

A new claim 8 recites the subject matter of the previous claim 3, which was dependent from claim 1 in the set of claims as filed. Claim 8 incorporates the essential elements of claim 1 as well as those of claim 3. Claims 4 – 7 are cancelled and the subject matter of those claims is incorporated in the enclosed new claims 9 – 12. Those claims are now believed to be in condition for allowance.

Claims 1, 2 and 6 are rejected under 35 U.S.C. §103 as unpatentable over Toennesen. As noted, applicants claim 1 recites "...comprising an O-ring manufactured from an elastic materials." The Office Action states that to choose an O-ring as a valve element is considered to be an obvious design expedient. Known valve members are typically manufactured of a flexible material and all have an especially designed form resulting in a complicated and expensive manufacturing process. In accordance with the invention, the often complicated and expensive prior art valve members are replaced with well-known, relatively inexpensive, and widely available standardized elements. It is well recognized that O-rings have been known for a long period of time and are widely available. Further, tests have shown that manufacturing tolerances are very small. Advantageously, the same tolerances result in very

accurate reacting for opening and closing of the valve when an O-ring is used in the manner of the present invention. Furthermore, changing the operating pressure at which a valve open and closes can also be readily achieved by using O-rings having different elastic properties.

A further advantage is that two or more O-rings can be used, as depicted in FIG. 2 of the application, without the risk that only one of the O-rings will react thereby reducing the total flow.

A further advantage of using O-rings, as compared to known valve elements, having a wing-like, configuration with weaker parts along the perimeter result in accelerated wear, is that the massive O-ring body is much less sensitive to wear along edges. Furthermore, when an O-ring is used, opening of the valve member is the result of a circumferential stretching of the whole ring, instead of deforming a part of the valve element, as occurs with many prior art valves.

A further advantages of the O-ring is that it is a self centering element and therefore is considerably more suited for an adjustable valve than known valve elements which are configured according to the modeling of valve seats and may not form a reliable seat. Thus, although there are a number of commercial advantages to using O-rings as blow-off elements, there is no indication that others have used such elements, presumably for the reason that they did not recognize the full possibilities of an O-ring as a valve member.

In light of the above, it is submitted that claim 1 will have not have been obvious to a person of ordinary skill at the time the invention was made since there is no indication in cited art that O-rings have been used or suggested as elements to solve the problems encountered in the prior art, as is accomplished by this invention.

In light of the above, claim 1 is believed to recite patentable subject matter and claims 1 and 2, as amended herein and new claims 8 – 12 are believed to be in condition for allowance. Early notification of allowance will be appreciated.

It is noted in the Office Action that an abstract has not been supplied. An abstract on a separate sheet is submitted herewith.

In the event that the Examiner considers that a discussion with Applicants attorney may be helpful in the disposition of the case, the Examiner is cordially invited to call Applicants attorney at the telephone number indicated below.

Respectfully submitted,

Date 11/21/02

By _____

Peter Visserman, Reg. No. 25,185
Varnum, Riddering, Schmidt & HowlettLLP
Bridgewater Place
P.O. Box 352
Grand Rapids, Michigan 49501-0352
(616) 336-6000

Version with Markings to Show Changes Made

1. (Amended) A non-return valve [(1; 11; 21; 51; 71)] comprising a valve member [(2; 12; 22, 32; 52; 72)] having a circumferential face and a channel [(3, 4; 13, 14; 23, 24, 33, 34; 53; 73, 74) with a mouth on either side,] having opposite ends and a mouth at each of the opposite ends, (the mouth at one at one end of the channel) one of the mouths being sealable by a valve element [(9; 19; 29, 39; 59; 79)] capable of releasing said one mouth at a predetermined pressure in the channel higher than a ambient pressure, said valve element comprising an O-ring manufactured from an elastic material, [(such as a rubber or a resilient plastic,)] and said one mouth of the channel being located in a groove [(7; 17; 27, 37; 66)] sealed by the valve element, and having circumferential edges provided on parts which are adjustable and fixable relative to each other, [characterized by] and a setting mechanism [(6b, 6c; 16; 26; 63, 64; 77, 80)] for steplessly setting the circumferential edges such that they are lockable and displaceable relative to each other.

2. (Amended) A non-return valve according to claim 1 [, characterized in that] wherein the setting mechanism [(6b, 6c; 16; 26; 63, 64; 77, 80;)] comprises a screw connection [whereby] and wherein one of the circumferential [edge] edges is displaceable relative to [the] an other circumferential edge.